1.	**Field of study**	**Materials Science and Engineering**
2.	Faculty	Faculty of Science and Technology
3.	Academic year of entry	2019/2020 (winter term), 2020/2021 (winter term), 2021/2022 (winter term), 2022/2023 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

Module: Technical drawing

Module code: IM1A_RT

1. Number of the ECTS credits: 4

2. Learning outcomes of the module

code	description	learning outcomes of the programme	level of competence (scale 1-5)
IM1A_RT_1	Students have basic knowledge about the rectangular projection in the representation and restitution of space elements	IM1A_U04 IM1A_W22	2 2
IM1A_RT_10	Students can draw an assembly drawing and a set of working drawings for a given subassembly.	IM1A_U04 IM1A_W22	3 4
IM1A_RT_2	Students have basic knowledge about shaping technical forms using polyhedron solids and surfaces.	IM1A_W22	3
IM1A_RT_3	Students have basic knowledge about the isometric drawing.	IM1A_U04	3
IM1A_RT_4	Students have skills to apply appropriate types of cross-sections.	IM1A_U04 IM1A_W22	3 3
IM1A_RT_5	Students can use elements of standardisation in the structure recording.	IM1A_U04 IM1A_W22	3 2
IM1A_RT_6	Students can dimension flat and rotary elements.	IM1A_W22	4
IM1A_RT_7	Students can graphically present joints of machine components.	IM1A_U04 IM1A_W22	3 3
IM1A_RT_8	Students can apply the marking of the surface state, tolerance and fit.	IM1A_W22	3
IM1A_RT_9	Students can prepare technical documentation of subassemblies.	IM1A_U04 IM1A_W22	3 4

3. Module description	
Description	The classes are aimed at the skill to present spatial objects on a drawing sheet plane using basic rules of rectangular projection. References: T. Dobrzyński, Rysunek techniczny maszynowy /Engineering Drawing/, WNT – Warszawa, T. Lewandowski, Rysunek techniczny dla mechaników /Technical drawing for mechanics/, WSziP 2009, A set of Polish technical drawing and engineering drawing standards.
Prerequisites	-

4. Assessment of the learning outcomes of the module

code	type	description	learning outcomes of the module
IM1A_RT_w_1	Control papers	Performing designs during laboratory classes.	IM1A_RT_1, IM1A_RT_10, IM1A_RT_2, IM1A_RT_3, IM1A_RT_4, IM1A_RT_5, IM1A_RT_6, IM1A_RT_7, IM1A_RT_8, IM1A_RT_9
IM1A_RT_w_2	Homework	Making drawings from the field of axonometry and dimensioning in the form of designs.	IM1A_RT_1, IM1A_RT_10, IM1A_RT_2, IM1A_RT_3, IM1A_RT_4, IM1A_RT_5, IM1A_RT_6, IM1A_RT_7, IM1A_RT_8, IM1A_RT_9
IM1A_RT_w_3	Semester paper	Preparing documentation in the form of an assembly drawing.	IM1A_RT_1, IM1A_RT_10, IM1A_RT_2, IM1A_RT_3, IM1A_RT_4, IM1A_RT_5, IM1A_RT_6, IM1A_RT_7, IM1A_RT_8, IM1A_RT_9
IM1A_RT_w_4	Credits test	Test consisting of 10 multiple-choice questions.	IM1A_RT_1, IM1A_RT_10, IM1A_RT_2, IM1A_RT_3, IM1A_RT_4, IM1A_RT_5, IM1A_RT_6, IM1A_RT_7, IM1A_RT_8, IM1A_RT_9

5. Forms of teaching

code	form of teaching			required hours of student's own work		assessment of the learning outcomes of the module
	type	description (including teaching methods)	number of hours	description	number of hours	
IM1A_RT_fs_1	lecture	Lecture with the use of audiovisuals, models and graphs on transparent foils.	15	Active participation in classes.	15	IM1A_RT_w_4
IM1A_RT_fs_2	laboratory classes	Performing credits tests during laboratory classes on individual topics.	30	Own student’s work during laboratory classes.	45	IM1A_RT_w_1, IM1A_RT_w_2, IM1A_RT_w_3